

Nutrition Therapy and Clinical Outcomes in Critically Ill Patients



Nutrition therapy is an important component of care for critically ill patients. The European Society for Clinical Nutrition and Metabolism (ESPEN) critical care guidelines recommend a progressive ramp-up of medical nutrition therapy, providing < 70% of measured energy expenditure or estimated needs during the early phase of acute illness and up to 80–100% after day three.

The clinical outcomes of patients with prolonged ICU stay are associated with nutrition therapy. However, most critically ill patients do not receive adequate nutritional intake. There is very limited data on whether nutritional therapy for critically ill patients adheres to ESPEN recommendations.

In this study, the researchers assess nutrition practices in European ICUs and their impact on clinical outcomes. The study included patients who stayed in an ICU for ≥ 5 days, with outcomes recorded until day 90. The primary outcome of the study was the median calorie and protein balances until ICU discharge, death, or by day 15 of ICU stay.

Macronutrient intake from enteral and parenteral nutrition and non-nutritional sources during the first 15 days of ICU admission was compared with targets recommended by ESPEN guidelines. Study researchers studied association between three categories of daily calorie and protein intake: low (< 10 kcal/kg, < 0.8 g/kg); moderate (10–20 kcal/kg, 0.8–1.2 g/kg) and high (> 20 kcal/kg; > 1.2 g/kg). They studied the time-varying hazard rates of 90-day mortality or successful weaning from invasive mechanical ventilation.

A total of 1172 patients with a median APACHE II score of 18.5 were included in the study. 24% of the patients died within 90 days. The median length of ICU stay was 10.0, and 74% of patients could be weaned from invasive mechanical ventilation. Patients on average reached 83% and 65% of ESPEN calorie and protein recommended targets, respectively. The median calorie and protein intake during the first 15 days after admission to the ICU was 15.9 kcal/kg and 0.7 g/kg per day. The researchers note that specific comorbidities such as respiratory diseases requiring invasive ventilation predicted a higher intake. Intake was reported to be lower in patients with regular assessment of nutritional needs.

Overall, study findings show that calorie intake in the ICU was mainly provided as per the targets recommended by the ESPEN guideline. However, protein intake was lower. The researchers concluded that early moderate daily calorie and protein intakes are associated with improved clinical outcomes.

Source: [Critical Care](#)
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